REMARKS/ARGUMENTS

The Examiner is thanked for the clarity and conciseness of the Office Action and for the citation of the references which have been studied with interest and care.

Claim Rejections - 35 U.S.C. §§ 102 and 103

Claims 5-13 were rejected under 35 U.S.C. §102(b) as being anticipated by Faltys (US 6,157,861, hereinafter "Faltys").

Faltys discloses "an automated method of determining a suitable range of stimulus intensity for an implantable cochlear stimulator (ICS). Such method includes the steps of: (1) delivering a test stimulation level to one or more of the intracochlear electrodes of the ICS; (2) measuring a physiological response from the subject; (3) adjusting the stimulation level up or down according to a preprogrammed algorithm, and repeating the measurement until a desired response occurs; and (4) automatically recording the final stimulation level determined by the algorithm and using this value, or a value derived by a predetermined function of the recorded value, to determine the intensity of stimulation to be delivered during the normal operation of the ICS." [Faltys, column 4, line 59 - column 5, line 5.]

Applicant's method for fitting a cochlear implant system addresses deficiencies of prior approaches by accounting for temporal and spatial integration. With reference to amended claim 5, this is accomplished via the repetition of steps (b) through (d) for other groups of electrode contacts, in conjunction with step (f), wherein step (b) comprises applying an amplitude modulated pulse train at a known intensity level and having a rate that mimics live speech to the defined group of electrode contacts. Advantageously, when electrical stimuli are applied on multiple electrodes at "live speech" pulse rates, the level at which the stapedial reflex is elicited shows a higher correlation with actual "live speech" comfort levels. Applicant respectfully traverses the Examiner's assertion that Faltys [column 1, lines 50-65] teaches a step applying an amplitude modulated pulse train at a known intensity level and having a rate that mimics live speech.

Further with regard to claim 6, Faltys does not disclose or suggest that the recorded intensities obtained in step (d) for each group of electrode contacts comprise a contour of intensities, and that the method further includes the step for grouping all of the electrode contacts into a defined last group of electrode contacts and globally shifting the contour of intensities by applying the electrical stimuli to the last group of electrode contacts and adjusting its intensity until a desired stapedial reflex criteria is observed.

Further with regard to claim 10, Faltys does not disclose or suggest that step (b) comprises applying stimuli derived from input signals selected from a group of input signals comprising: shaped bands of noise whose overall bandwidth is adjustable; modulated bands of noise whose center frequencies are adjustable; complex tonal stimuli whose spectra and various amplitude components are adjustable; speech tokens whose spectra and amplitude envelopes are well described; and white noise.

Claims 1-4 and 14-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maltan (US 6,415,185, hereinafter "Maltan") in view of Faltys.

Maltan discloses a technique for measuring the myogenic evoked response (MER), i.e., an invoked potential occurring between wave 5 of the elicited auditory brainstem response (EABR) at a latency of about 5 to 12 milliseconds following acoustic stimulation. Significantly, Maltan discloses a technique for programming a Cochlear implant system based, in part, on measured evoked potentials that precede the stapedius reflex. In contrast with Faltys, Maltan addresses "a need for alternative ways, other than sensing the stapedius reflex, to obtain objective data that can aid in the setting of the stimulation parameters of a Cochlear stimulation device." [Maltan, column 1, lines 60-63.]

Clearly, there is no disclosure or suggestion in Maltan that it would be desirable to provide: means for observing a stapedial reflex criteria of a patient within whom the cochlear implant system is adapted to be implanted; [or] means for adjusting the intensity of the electrical stimuli applied to each group of electrode contacts until a stapedial reflex criteria of the patient is observed. Maltan expressly teaches away from sensing the stapedius reflex in the first instance. Even if it ultimately determined that Maltan and Faltys were properly combined, the collective teachings of these references provide no disclosure or suggestion to one of ordinary skill in the art that it would be desirable to modify the MER measuring technique of Maltan for observing and adjusting the stapedial reflex. Thus, it is respectfully submitted that the collective teachings of the cited references fail to disclose or suggest claims 1 and 14.

Further with regard to claim 3, the collective teachings of Maltan and Faltys fail to disclose or suggest that the pulse trains of electrical stimuli are derived from input signals selected from a group of input signals comprising: (a) shaped bands of noise whose overall bandwidth is adjustable; (b) modulated bands of noise whose center frequencies are adjustable; (c) complex tonal stimuli whose spectra and various amplitude components are adjustable; (d) speech tokens whose spectra and amplitude envelopes are well described; and (e) white noise.

Further with regard to claim 4, the collective teachings of Maltan and Faltys fail to disclose or suggest the method of claim 1 further comprising forming a final group of electrode contacts that includes all of the electrode contacts in the selected groups of electrode contacts, and delivering the pulse trains of electrical stimuli to the final group of electrode contacts after the pulse trains of electrical stimuli have been delivered to all other groups of electrodes that include less than all of the electrode contacts.

Further with regard to claim 15, the collective teachings of Maltan and Faltys fail to disclose or suggest that the means for applying electrical stimuli comprises means for generating speech-like stimuli, and means for simultaneously applying the speech-like stimuli to each electrode contact in the group of electrode contacts.

Further with regard to claim 16, the collective teachings of Maltan and Faltys fail to disclose or suggest that the speech-like stimuli comprise electrical signals derived from input signals selected from a group of input signals comprising: shaped bands of noise whose overall bandwidth is adjustable; modulated bands of noise whose center frequencies are adjustable; complex tonal stimuli whose spectra and various amplitude components are adjustable; speech tokens whose spectra and amplitude envelopes are well described; and white noise.

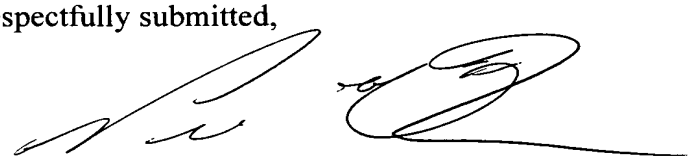
For the reasons discussed above, withdrawal of these rejections is respectfully requested.

CONCLUDING REMARKS

Applicant submits that the application is in condition for allowance. Concurrence by the Examiner and early passage of the application to issue are respectfully requested.

Any additional fees which are required in connection with this communication and which are not specifically provided for herewith are authorized to be charged to deposit account no. 500651. Any overpayments are also authorized to be credited to this account.

Respectfully submitted,



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